

## Remarks

In the present response, Claims 1, 2, 7 and 13 have been amended. Collectively, Claims 1 – 20 are presented for examination.

### **I. Claim Rejections: 35 USC § 102**

Claims 1-5, 7 -11, 13 – 14, 18, and 20 are rejected under 35 U.S.C. §102(b) as being anticipated by USPN 4,677,505 (hereinafter Nukada). Applicants respectfully traverse.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See MPEP § 2131, also, *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Since Nukada neither teaches nor suggests each element in the rejected claims, these claims are allowable over Nukada.

### **Claim 1**

Currently amended Independent Claim 1 recites numerous recitations that are not taught or suggested in Nukada. For example, claim 1 recites:

eclipsing in a tapered manner an amount of the light according to a position of the tape head.

Nowhere does Nukada teach or suggest eclipsing light according to the position of a tape head *in a tapered manner*. The Office Action cites Nukada at col. 6, lines 43-63 as teaching a monotonic eclipsing of light. Applicants respectfully disagree.

A more applicable teaching is found in Nukada at col. 6, lines 55 – 63, which are reproduced below for convenience:

However, when the protrusion 72 moves with the motion of the head holding section 74, the rate of obstruction of the light passage

by the protrusion 72 varies, with the result that the output signal from the photoelectric conversion device 88 varies also. Namely, the variation in the output signal of the photoelectric conversion device 88 corresponds to the distance over which the head section 80 moved in the lateral direction of the tape.

From these teachings, Nukada does not teach monotonic eclipsing of light. In actuality, Nukada provides that an area of the light sensor is shielded by an “edge” of a head supporting member. This is further clarified in Nukada Claim 7 wherein it states that “a prescribed amount of area of ... light sensor is shielded by an edge of a head supporting member”. By using an edge to shield the light sensor (photoelectric conversion device 88), Nukada requires that the photoelectric conversion device have a prescribed area such as found in a linear photo sensitive device. As such, the light is not shielded in a monotonic manner; the sensor is shielded. This is not merely a matter of reference as will now be further clarified.

By using an edge, there is simply not enough of a *linear* eclipsing of light to support position adjustment. The variation in the signal provided by a light sensor with limited area (e.g. a photodiode) will travel through a small monotonic response, but will quickly saturate to either of two signal values on either end of the travel of a tape head. This is why Applicants teach the use of an aperture or other means of providing a monotonic *and tapered* eclipsing of light (such as a tapered edge). By tapering an eclipsing edge, as Applicants have taught, the response in a signal indicative of position of a tape head will exhibit a large monotonic *and linear* range. Again, in contrast, Nukada requires a sensor that has a linear area (see Fig. 3, which shows an elongated detector 88). It is only by using linear sensor that Nukada can achieve any stability in motion control.

For at least these reasons, claim 1 is allowable over Nukada. A dependent claim inherits the limitations of a base claim. Thus, for at least the reasons given in connection with independent claim 1, the dependent claims depending from claim 1 are also allowable over Nukada.

### **Claim 7**

Currently amended independent claim 7 recites numerous recitations that are not taught or suggested in Nukada. For example, claim 7 recites:

eclipsing device that eclipses light in a tapered manner according to a position of the tape head.

Nowhere does Nukada teach or suggest a device that eclipsed light in a tapered manner. The Office Action refers to the citations given in connection with the rejection of claim 1. Applicants respectfully disagree.

As noted above, Nukada teaches eclipsing of an area of a light sensor, which requires a sensor that has a linear area as discussed above.

For at least these reasons, claim 7 is allowable over Nukada. A dependent claim inherits the limitations of a base claim. Thus, for at least the reasons given in connection with independent claim 7, the dependent claims depending from claim 10 are also allowable over Nukada.

### **Claim 13**

Currently amended independent claim 13 recites numerous recitations that are not taught or suggested in Nukada. For example, claim 13 recites:

optical position sensor mechanism having a tapered light eclipsing response that generates a position signal according to the position of the tape head.

Nowhere does Nukada teach or suggest a device that eclipsed light in a tapered manner. The Office Action refers to the citations given in connection with the rejection of claim 1. Applicants respectfully disagree.

As noted above, Nukada teaches eclipsing of an area of a light sensor, which requires a sensor that has a linear area as discussed above.

For at least these reasons, claim 13 is allowable over Nukada. A dependent claim inherits the limitations of a base claim. Thus, for at least the reasons given in connection with independent claim 7, the dependent claims depending from claim 10 are also allowable over Nukada.

## **II. Claim Rejections: 35 USC § 103**

The subject matter of the currently pending claims is not subject to common ownership rules.

Claims 15 and 17 are rejected under 35 USC § 103(a) as being unpatentable over Nukada et al. in view of USPN 4,176,381 to de Niet. Applicant notes that claims 15 and 17 are dependent upon independent claim 13, a claim that Applicant avers has not been rejected under 35 USC § 103. If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is non-obvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

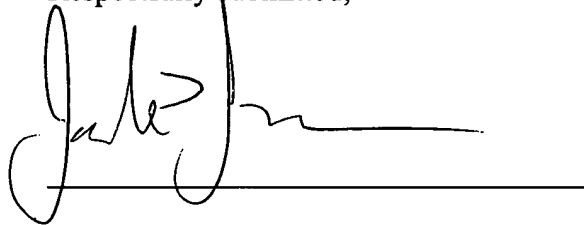
## **III. Allowable Subject Matter**

Applicants sincerely thank the Examiner for indicating that claims 6, 12, 16 and 19 would be allowable if rewritten in independent form.

### CONCLUSION

In view of the above, Applicants believe all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Respectfully submitted,



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